extend to the bifurcation; and after a very few inhalations complete anæsthesia ensued. During this condition it was again advanced *beyond the bifurcation into a bronchus;* and although chloroform continued to be inhaled the anæsthetic condition gradually disappeared. Thus, if one lung or a portion of one lung is only acted upon by chloroform, no anæsthesia is produced; if both lungs are acted upon, anæsthesia supervenes: and if, during this anæsthesia, one lung is removed from the direct influence of chloroform, the anæsthesia ceases, notwithstanding the continuance of chloroform inhalation by the other lung. Carbonic acid was found to act in the same way. When carbonic oxide, however, was brought into contact with only limited portions of the pulmonary surface, its characteristic effects were nevertheless quickly produced. It thus appears, according to Dr. Faure, that chloroform resembles carbonic acid in acting only by interfering with respiration, and not as a systemic poison; carbonic oxide, on the other hand, passes through the lungs without producing any changes of such a nature as to interfere with respiration, and its symptoms are caused whenever it is absorbed into the system. Many of the experiments in Dr. Faure's paper are worthy of repetition by independent observers, and his conclusions are certainly of such importance as to require and deserve confirmation.

M. P. BERT has examined whether a stage of excitement occurs during the action of chloroform and ether, in the sense of a true stimulation of the cerebrospinal nervous system preceding the stage of depression (*Archives Gén. de Méd.*, May, 1867). This he denies, because, among other reasons, if the spinal cord be divided before the inhalation no symptoms of excitement occurred below the incision, but yet reflex power became abolished there; while above the incision the usual movements occurred. These movements, which constitute the symptoms of the stage of excitement, M. Bert refers to irritation of the mucous membranes by chloroform vapour.—*Journ. Anat. and Phys.*, Nov. 1867.

11. *Chloroform and its Medical Uses.*—The *Dublin Quarterly Journal of Medical Science* for August, 1867, contains a paper on this subject by Dr. C. KIDD, which does not add materially to our knowledge, but we call attention to it in consequence of a remarkable statement which he makes, and which we must confess to be altogether new to us. He states that "the highest American authorities have now decided it [ether] is quite as dangerous as chloroform." Dr. Kidd should have given the names of those whom he considers as the "highest American authorities," for we are under the impression that these authorities entertain the very opposite opinion. Indeed, while some advantages are claimed for chloroform over ether as an anæsthetic, its superior safety is surely not one of them.

12. *Action of Sulphate of Quinia.*—EULENBURG (*Comptes Rendus*, March 4, 1867), concludes, from an extensive series of experiments on frogs, that sulphate of quinia acts energetically as a paralyzer of the respiratory movements and of the heart. The former cease from ten to sixteen minutes after the administration of doses varying from half a grain to two grains. The effect on the heart is independent of, and occurred several hours after, the stoppage of respiration. It is supposed to be due to an action on the cardiac muscle itself and on its excito-motor ganglia; as previous division of the vagi did not prevent it. Among other phenomena, it was found that this substance destroys the function of the spinal reflex centres, and afterwards those of the centres of sensation and of voluntary movement in the cerebrum. Some doubt is cast on this research by a subsequent one of M. JOLYET (*Comptes Rendus*, 2 Avril). This investigator found that when sulphate of quinia was injected under the skin of the feet the effects were quite different from those of its injection under the skin of the back. The latter method was adopted by Eulenburg; and Joylet asserts that Eulenburg's principal results were, therefore, caused by the direct action on the heart that such administration admits of, and that many of the subsequent phenomena and their sequence were caused by the natural extension, by imbibition, of the substance injected.—*Journ. Anat. and Phys.*, Nov. 1867.

13. *Action of Curare.*—Dr. HERMANN (*Reichert und Du Bois Reymond's Archiv*, 1867, p. 64) has explained by a simple experiment why a dose of curare

sufficient to kill if introduced under the skin of a rabbit, proves harmless when injected into the stomach. He tied the renal vessels previous to the administration by the stomach, and found that death resulted just as certainly, though not so rapidly, as when the poison was introduced subcutaneously. He believes from this that the immunity by stomach-administration is not due to non-absorption by the mucous membrane of the alimentary canal, but to such tardy absorption as allows of its removal by the kidneys before any poisonous accumulation in the blood. In like manner he accounts for the non-fatal effects of the poison of serpents, and also of various potassium salts, when introduced by the stomach. He explains the fact of even moderate doses of curare poisoning birds when given by the stomach, by supposing that the removal of the poison must be very slowly accomplished as the urine of birds is semifluid. He points out the importance of attending to the state of the excretory organs during the administration of poisonous substances; for if the normal balance between absorption and excretion be disturbed, results may follow that were neither anticipated nor desired.—*Ibid.*

14. *Action of Antiseptic Agents on Infusoria.*—Dr. Binz, of Bonn (*Centralblatt*, No. 20, 1867), has investigated the effects of various antiseptics upon the animalcules found in vegetable infusions. He particularly examined the actions of these agents upon the paramecium colpoda, so commonly found in putrid infusions of hay. The infusion and the antiseptic were allowed to come into contact with each other on a glass slide, while he observed the result by means of a low magnifying power. Binz classifies the substances that injured the paramecium into two groups: 1. Those that kill by producing osmosis; among which are chloride and hyposulphite of sodium, chlorate of potassium and alum. 2. Those that have a directly poisonous influence, among which are nitric, sulphuric, tannic, and acetic acids, creasote, permanganate of potassium, corrosive sublimate, iodine, bromine, chlorine, and quinia. Of the acids, acetic is the most powerful poison. Solutions of 1 part of corrosive sublimate in 1500 of water, of 1 of iodine in 5000 of water, of 1 of bromine in 12,000 of water, of 1 of chlorine in 25,000 of water were poisonous. Quinia has also a powerful action on the paramecium; 1 part in 400 of water produces instant death, and 1 in 10,000 kills in two hours. Strange to say, salacine does not injure this animalcule, even when employed in a solution of 5 per cent.; and a 1 per cent. solution of nitrate of strychnia produced no injury within two hours.—*Ibid.*

15. *Action of Bromide of Potassium.*—M. J. V. Laborde (*Comptes Rendus*, July 8) describes the general results of numerous experiments with bromide of potassium on man and on various animals, but principally on batrachians (Rana viridis). Four or five minutes after administering from three to six grains to frogs, a slight general excitation, with somewhat tetanic movements, was caused. This was soon succeeded by weakness and then by a condition of flaccidity, during which reflex action was entirely abolished; but the power of voluntary movement was retained until long after this. The heart was but slightly and gradually affected, and continued to contract for several hours after the loss of reflex power. Laborde concludes that bromide of potassium has no special action on the heart, muscles, encephalon, or nerves; but that it mainly and primarily influences the spinal cord. He also studied comparatively the effects of iodide of potassium and bromide of sodium—substances whose chemical constitution might suggest a correspondence with bromide of potassium in physiological action. Twice or thrice as large a dose of bromide of sodium, however, produced no effect; and iodide of potassium, though active, differed greatly in the nature of the symptoms it caused. The exhibition of these substances was effected by placing them, in a state of fine division, on the interdigital membrane; and absorption by this surface was found to be rapid. Eulenburg and Guttmann have also examined the physiological action of this substance (*Centralblatt*, May 18). From thirty to sixty grains given to rabbits by the stomach or by hypodermic injection, caused death in from ten to forty minutes. A smaller, non-poisonous dose, produced paralysis and cardiac irregularity. When one or two grains were injected into the subcutaneous tissue of frogs, paralysis